Small
Business
Innovation
Research

AlGaN UV Solar-Blind Detector Array

Superior Vacuum Technology Associates (SVTA)

Eden Prairie, MN

INNOVATION

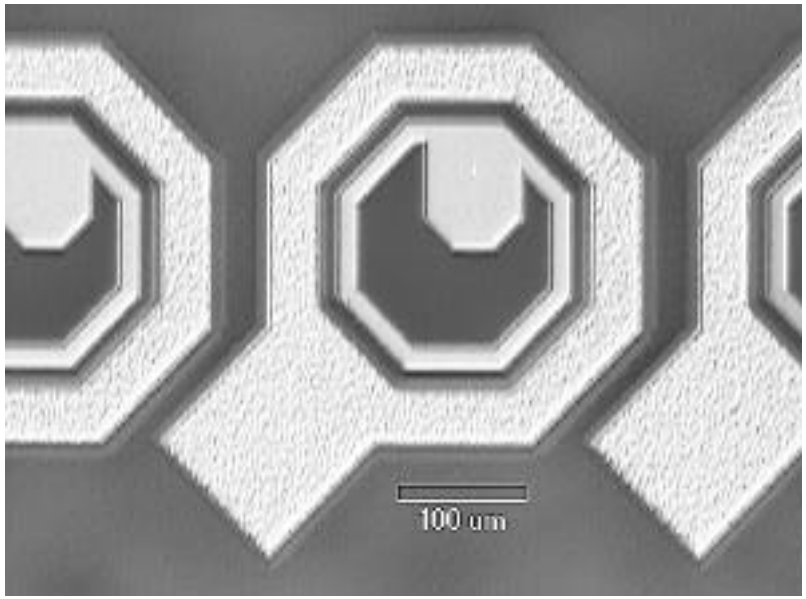
Photovoltaic detector array with high quantum efficiency fabricated from Aluminum Gallium Nitride (AlGaN)

ACCOMPLISHMENTS

- Demonstrated AlGaN UV detector which is blind to visible and IR wavelengths. Best published UV/visible rejection ratios for nitride detector.
- Fabricated detector with 90% quantum efficiency response at 360 nm. Shorter wavelength response better than commercial Si UV enhanced diodes.
- Developed nitride growth technology using RF nitrogen plasma source.

COMMERCIALIZATION

- Over 55 RF nitrogen plasma sources have been sold to multiple industrial users and universities at $30K each for Molecular Beam Epitaxy (MBE) nitride deposition.
- Five Molecular Beam Epitaxy systems designed for AlGaN growth sold.
- Delivering AlGaN device epitaxy wafers to many research groups.
- UV detectors have been shipped to several beta sights throughout the country.
- Five full-time positions created and commercial sales total $2.3M.



One Element of Aluminum Gallium Nitride 1x10 Photovoltaic Detector Array

GOVERNMENT SCIENCE/APPLICATIONS

- High temperature flame sensor for combustion monitoring.
- UV focal plane array for astronomical observations.
- Missile detection and guidance.
- UV spectroscopy.

Points of Contact:
- NASA - Brent Mott; 301-286-7708
- Superior Vacuum - James VanHove; 612-941-1898

Goddard Space Flight Center

1993 Phase 2, SS-162, 3/6/98